Mich Potash — Well Construction & Plugging
MI-133-I-0006
Permit Apl
P&A plan 10/1/14
P&A plan 5/22/14 ?

SURFACE CASING: $13\frac{3}{8}$, $17\frac{1}{2}$ → 1.4396 ft/ft³
(Cmnt yield → 1.47 ft³/sk)

$$(370\ sk)\left(\frac{1.47\ ft^3}{sk}\right)\left(\frac{1.4396\ ft}{ft^3}\right) = 677\ ft$$

✓ (4) ~~Not cemented to surface~~ ? ok

✓ (4) Permit apl well diagram Sec. F not consistent w/ Sec. L well construction description.
DIAGRAM: $13\frac{3}{8}$ casing, $17\frac{1}{2}$ hole
DESCRIPTION: $9\frac{5}{8}$ casing, $13\frac{1}{2}$ hole

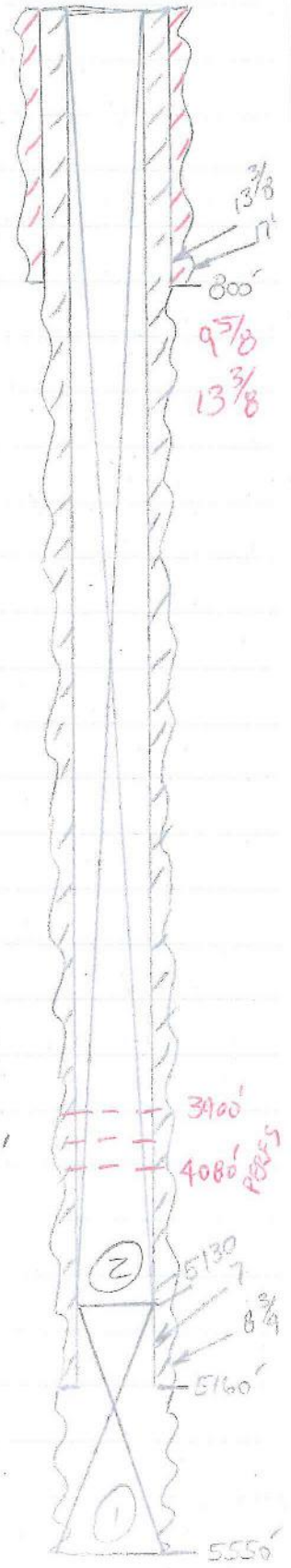
? ✓ P&A plan does not identify well construction ok

PRODUCTION CASING: 7, $8\frac{3}{4}$ → 6.6520 ft/ft³
(Cmnt yield: 1.24 ft³/sk, 1.47 ft³/sk)

STAGE 1
$$(240\ sk)\left(\frac{1.24\ ft^3}{sk}\right)\left(\frac{6.6520\ ft}{ft^3}\right) = 1979'$$

STAGE 2
$$(430\ sk)\left(\frac{1.47\ ft^3}{sk}\right)\left(\frac{6.6520\ ft}{ft^3}\right) = 4,204'$$

TOTAL: 6183 ft
ok



MI-133-1I-0006 PIA 5/22/14?

SURFACE CASING $9^{5/8}$, $13^{3/8}$ → 2.1258 ft/ft³

$$(320\ \text{ok})\left(\frac{1.47\ \text{ft}}{\text{ft}^3}\right)\left(\frac{2.1258\ \text{ft}}{\text{ft}^3}\right) = 1000\ \text{ft}$$

(4) PERFS INTO REED CITY FORMATION WAS WITHDRAWN FROM PERMIT APPLICATION BY MP ON OCT. 17, 2015

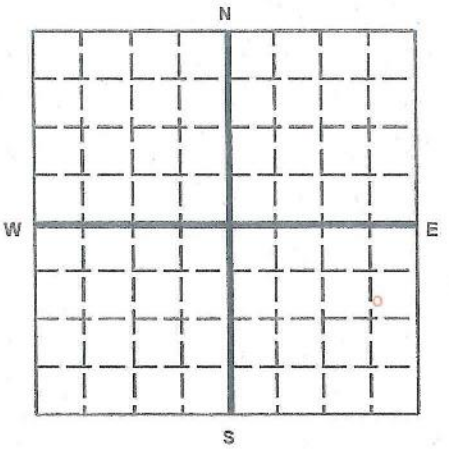
OMB No. 2040-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility	Name and Address of Owner/Operator
MPC 3D	Michigan Potash Operating, LLC c/o Fox Rothschild 1225 17th Street, Suite 2200, Denver, CO 80215

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Michigan	Osceola	

Surface Location Description

SW 1/4 of SE 1/4 of NE 1/4 of SE 1/4 of Section 36 Township 17 Range 9

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location ___ ft. frm (N/S) N Line of quarter section 1168'FRM N

and ___ ft. from (E/W) E Line of quarter section. 442'FRM E

TYPE OF AUTHORIZATION

- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

Lease Name

WELL ACTIVITY

- [x] CLASS I
- [ ] CLASS II
  - [x] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Well Number MPC 3D

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
7	23-28	0	5160	8 3/4

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- [ ] The Balance Method
- [ ] The Dump Bailer Method
- [ ] The Two-Plug Method
- [x] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	8 3/4"	7"					
Depth to Bottom of Tubing or Drill Pipe (ft							
Sacks of Cement To Be Used (each plug)	155	775					
Slurry Volume To Be Pumped (cu. ft.)	228	1140					
Calculated Top of Plug (ft.)	5130	0					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	14.2	14.2					
Type Cement or Other Material (Class III)	A	A					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
5160	5550		

Estimated Cost to Plug Wells

$ 30,400

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Theodore A. Pagano, P.E., P.G., General Manager		10/01/2014

EPA Form 7520-14 (Rev. 12-11)